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Published in:
British Journal of Nursing

DOI:
[10.12968/bjon.2017.26.21.1192](https://doi.org/10.12968/bjon.2017.26.21.1192)

Publication date:
2017

Document Version
Peer reviewed version

[Link to publication in Discovery Research Portal](#)

Citation for published version (APA):
Smith, J., & Cambers, W. (2017). Using an electronic assessment system for nursing students on placements. *British Journal of Nursing*, 26(21), 1192-1196. <https://doi.org/10.12968/bjon.2017.26.21.1192>

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Using an electronic assessment system for nursing students on placements

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Introduction

We would like to acknowledge the contribution of Carol Maxwell, Team Leader, Technology Enhanced Learning Support Team, Abertay University.

E-health systems use has increased dramatically in recent years. Applications include electronic-based patient records, referrals and results retrieval systems, and provision of high quality electronic health information (Garrett et al 2013). Advantages include reduced paper use (Boggosian et al 2009), freedom of network access, ease of storage (Garret et al 2013), and reduced data loss and damage (Morgan and Dyer 2015). Information Technology (IT) literacy is an essential competency identified by the Nursing and Midwifery Council (2010). Recent developments in pre-registration nurse education reflect this trend with student nurses required to use IT systems during classroom-based elements of the curriculum via online discussion boards, e-forums, online lectures, narrated slide shows, and web-based library resources.

Adoption of e-health approaches to student assessment during clinical placement elements of the curriculum has been slower to develop. The electronic assessment record allows academic staff to monitor a students' progress remotely and in real time (Boggosian et al 2009). This provides a real advantage over paper-based systems; however, only a handful of Higher Education Institutions (HEIs) have replaced their current arrangements (Morgan & Dyer 2015). A shared paper-based, system has been collaboratively implemented by HEIs across Scotland (NES 2011). While this signifies a step-change in the evolution of assessment documentation it is less than ideal. An electronic equivalent of the paper-based system, the electronic Ongoing Assessment Record (eOAR), was planned for pilot introduction in NHS

Fife in 2015. To maximise learning we conducted a study to explore students' and clinical mentors' reactions to, and experiences of, the development prior to wider roll-out.

Literature Review

Stephenson (2015) identified that benefits from the pilot implementation of electronic assessment by one HEI in England in 2013 included improvement of students' portfolios, and a quicker and easier process leading to reduced costs. Morgan and Dyer (2015) gathered feedback from 380 students to analyse their use of an online support system. Students were mostly concerned about the IT-system and the interface between academia and the NHS. While the electronic assessment was welcomed, the lack of computers in clinical areas was a concern. More recently, Garret et al (2013) have highlighted that this has become less problematic in the hospital setting. Innovative steps have been largely welcomed; for example, Bogossian et al (2009) reported positive reactions from students who were issued tablet computers to complete their eOAR.

Studies reveal that most students involved in eOAR report good levels of engagement, but some clinical practice mentors have been more reluctant to engage with technology use (Garret and Jackson 2006). Page (2011) suggests that registered nurses, some who feel overworked, have limited time to develop new skills and rank the development of relevant IT skills for student assessment as a low priority. Other studies have reported that nurses can be reluctant about, positive towards, and/or dismissive of the need to embrace technology as an integral part of their role (Scholes et al, 2004; Virgonia, 2013; Dearnley et al., 2008). Improved support and training has therefore been reported as pivotal to preparation of students and mentors for eOAR.

Aim of the study

Against this backdrop, introduction of an eOAR in NHS Fife was viewed as an opportunity to further understand how students and mentors can be supported to utilise technology for clinical assessment. The specific aims of this study were to i) explore mentors' and student nurses' experiences of moving from paper-based to electronic documentation of assessment; and ii) make recommendations about the necessary support and systems for the full roll-out of eOAR.

Methods

Setting and Participants

NHS Fife is one of 14 regional Health Boards in Scotland covering a large geographical area (total population 358,900; NHS Fife, 2017). Nursing students from several universities are hosted on clinical placement. For the pilot study, five first year student nurses enrolled on the BSc (Hons) Mental Health Nursing course at Abertay University were recruited from a class of approximately 40. We selected freshers as they had no prior experience of the paper-based system and we felt that this would provide the most useful information. This HEI itself works in partnership with two Health Boards and, to reduce potential confusion for participants, we offered the opportunity to participate to five student nurses who were scheduled to be on placement in NHS Fife for both of their first two placements. The placements comprised a variety of inpatient and community, mental health and adult settings. Placement mentors of the student nurses were locally allocated and participated in the study.

eOAR development

To develop the eOAR, the study team comprising the authors and the Abertay University Technology Enhanced Learning (TEL) team examined the paper-based practice assessment documentation. The agreed priorities were that the eOAR should accurately

duplicate the paper documentation and be user-friendly. Through use of an electronic, web-based platform with multiple pages, each unique quadrat of student nurse, practice mentor, academic supervisor, and practice education facilitator could access the individual student's record to enter comments, review assessments, or complete feedback from any location with web access.

Study measures

Study evaluation questionnaires were purpose-designed by the project team. They combined statements about participants' (students' and mentors') confidence about i) their IT skills generally; and ii) the eOAR specifically. Responses were requested on a 10-point Visual Analogue Scale on which '1'='Not at all confident' and '10' = 'Very confident'. Additionally, open-ended questions about anticipated/ actual support needs were included, and requests for any other comments about the eOAR were made. Focus group discussions facilitated by the academic lead took place with students before and after each placement, and students were asked to provide reflective, written accounts of their use of the eOAR. Mentors were invited to provide additional feedback verbally.

Procedure

Ethical approval was obtained from Abertay University Research Ethics Committee. Potential participants were provided with written information and where relevant indicated their informed consent in writing.

All first year student nurses, including our five participants, attended a 1-h workshop at the University delivered by the TEL lead to learn about assessment in practice and about the hard copy assessment tool. Student study participants also spent time with the academic and TEL leads for additional support and training about the eOAR specifically prior to commencing clinical placement. In this 30-minute session student participants' logged into

their newly created personal account, the eOAR was explained, and the academic lead facilitated a demonstration exercise using the eOAR during which live feedback onto each student's document was provided. Responses from the informal discussions with the students were recorded in writing during the meetings.

Each student's placement mentor was identified prior to placement-commencement and visited by the PEF and the TEL lead who delivered a training session. Further individual support was available to mentors throughout placements by PEF visits and telephone support from the university's TEL department. Students were requested to persevere with any issues and contact the PEF and TEL for effective troubleshooting and support. Students and mentors completed questionnaires about their experience of the eOAR before and following the clinical placements.

Data analysis

The range of pre- and post- placement confidence ratings for students and mentors were compared. Written narrative responses from the questionnaire and field notes from other conversations were subject to a thematic analysis (Braun & Clark, 2006).

Results

All students returned their pre- and post- placement questionnaires, apart from one who left the course of study during placement one. Total number of pre-placements questionnaires sent out, n = 9; post placement questionnaires sent out, n = 8 (Response 17/17: 100%). All mentors returned a pre- placement questionnaire, and all but one returned post placement questionnaires. Total number of pre-placements questionnaires sent out, n = 9; post placement questionnaires sent out, n = 8 (returned 16/17; 94%).

Reported confidence

Analysis of self-reported confidence levels from placement 1 revealed that all students (n=4) reported an improvement related to IT-use whereas n=2 mentors reported a decrease in confidence. Confidence with the eOAR specifically improved for three of the four students across placement 1. This was in contrast to the mentors (n=4) who all recorded a decreased score. After placement 2, most students (n=3) reported improved overall confidence in their IT skills as did most mentors (n= 3), while one mentor reported reduced confidence. Regarding use of the eOAR specifically, n=3 students reported an increase in confidence across placement 2..

Qualitative analysis

The main themes to emerge related to support needs, access to computers, document navigation, and future developments.

Support needs

Students and mentors both identified a need for support in using the eOAR system prior to and during placements. Questionnaire responses indicated - particularly for the mentors - that the training provided had not met their perceived needs. One student commented that they would have benefitted from *“another training session on the eOAR”*; whilst one commented on the need for ongoing *“reminding on navigation”*. Two mentors reported the need for *“practice using the electronic OAR”*; whilst another suggested that they needed time for *“getting to know the system”*.

Concerns raised by mentors resulted in additional support being provided by the PEF and the TEL throughout the placements. These ranged from students who had forgotten how to use the system and had to contact the TEL for additional support, to comments about the flexibility of the system. Some mentors were also provided with additional support from the students themselves. One mentor commented that it *“...was helpful to know that there was*

assistance available as necessary and where to access it. The student was prepared with knowledge of eOAR". The students, unlike the mentors, improved in confidence as they moved from placement one on to placement two and this was consistent with their comments predominately indicating that they required less support than the mentors following placement one: *"Just slight revision as this was second time using the eOAR"*.

One student, reflecting on the pre-placement preparation for mentors, reported that she was *"allocated a new mentor who hadn't received any training"* following placement commencement. This had presented her and the mentor with additional stress at the beginning of the placement. Another commented that her *"mentor was unhappy initially"*, however another reported how her mentor *"was very curious"*.

Access to hardware

Access to computers was a prevailing theme. *"The amount of and accessibility to computers is a major downfall in completing an eOAR on wards"*. (Student). The evidence from both students and mentors highlighted that most clinical areas only had one computer and this led to accessibility issues. Even where computers were available, their location in the placement areas presented a hindrance. *"Difficult to complete [eOAR] when only one PC in main office"* (Student). This in turn led to problems with privacy and confidentiality: *"[eOAR system] requires access to computer which is not always possible in a private space"* (Mentor). A student commented that: *"as was anticipated, it was very difficult to get time and peace to spend with your mentor"*.

Navigation

Both students and mentors highlighted the time that was required to navigate and complete the eOAR. *"There is an awful lot of criteria to be read which is easy when it is on a sheet of paper but when you have to scroll back and forth continuously to re-read and double*

check things it becomes quite laborious and time-consuming” (Student). A mentor commented “at a glance, the framework of this e-OAR was not ideal - very disorientating, eOAR was led by domains and ... the volumes of scrolling was extensive”.

Future developments

Additional comments by students and mentors supported further development of an eOAR: *“The eOAR is easier than paper and folder” (Student); “I did like the online booklet but there was a lot to complete”. (Mentor); “Overall a good experience” (Mentor). .*

Discussion

Results suggest that a number of key issues need to be addressed to maximise the possibility of successful widespread future implementation of an eOAR tool. Nevertheless, students were reasonably satisfied with the pilot study version of the tool and did not relish the prospect of using an 'analogue' eOAR.

It is sobering that, in 2016, the main reported problem was lack of, or lack of access to, a web-enabled computer in the clinical area. In this context, it is perhaps not surprising that study results revealed the mentors' overall lack of confidence with the eOAR system. This suggests a certain amount of organisational inertia (Macfarlane et al., 2013) within the NHS-staff as opposed to within first year students, but one which is, at least, understandable given the antediluvian infrastructure. Wright (2014) reported that, at a time when all of the UK health authorities were funding expansion of IT systems, nurses were expressing concern about the level of training on offer. This issue is most likely multiplied where employees effectively have no 'onthe job' access to IT to convert learning into practice. Morgan and Dyer (2015) also identified similar constraints relating to IT access and to the compatibility between HEI and clinical IT systems. Likewise they also identified the issue of time restraints, primarily as a result of clinical pressure.

Nurses' negative attitudes to increased use of IT into healthcare has been identified as a significant barrier towards its successful introduction (O' Mahoney et al 2014). Mistrust of IT, particularly in relation to confidentiality, or from fear of making a mistake (Cassano 2014) have been cited as causes. Further, in Scotland, 50-59 year olds made up the largest single group (32%) of the registered nurse workforce (Information Services Division Scotland, 2017). Rightly or not, it is this age group which are perceived as being less skilled with IT (McCabe and Timmins 2016) compared to their younger counterparts. Nonetheless, evidence suggests that all nurses are adapting to the introduction of ehealth, overcoming barriers and embracing the benefits, particularly for patient care (Odeh et al 2014: O'Mohony et al 2014: Huryk 2010). This can only be enhanced by provision of greater access in clinical areas.

Training for mentors was provided pre-placement on at least one occasion; however, some required additional support during the placement from both the PEF and the TEL. The overall findings from the study suggest that mentors would have benefitted from additional pre-placement training. However, it is also useful to know that, as an additional support, students themselves can effectively contribute to their mentor's use of the system. Participants faced with barriers, such as the limited access to IT and issues of privacy, were in fact able to overcome them resulting in the successful completion of all of the student's eOAR's.

Limitations included the small number of student nurses and mentors involved. However, for a pilot study (10% of total cohort) this allowed us to gauge what level of support was required and, equally importantly, provided. All students were mental health nursing branch students and it is not known whether results can generalise to adult or learning disability branch students.

Conclusion

This pilot study has demonstrated that, with appropriate training and support, and despite some anxieties, students and their mentors can develop the skills required to successfully use an eOAR tool. Considerable financial investment may be required; most obviously, investment in hardware is a priority need. However, an appropriate shift of resources is required to support the transition from a paper-based to an IT-based tool. Mentors in particular require greater support. HEI's and healthcare providers must be prepared to move with the times, embrace the benefits of IT, and invest in the future of nursing.

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